7-segment Display IC

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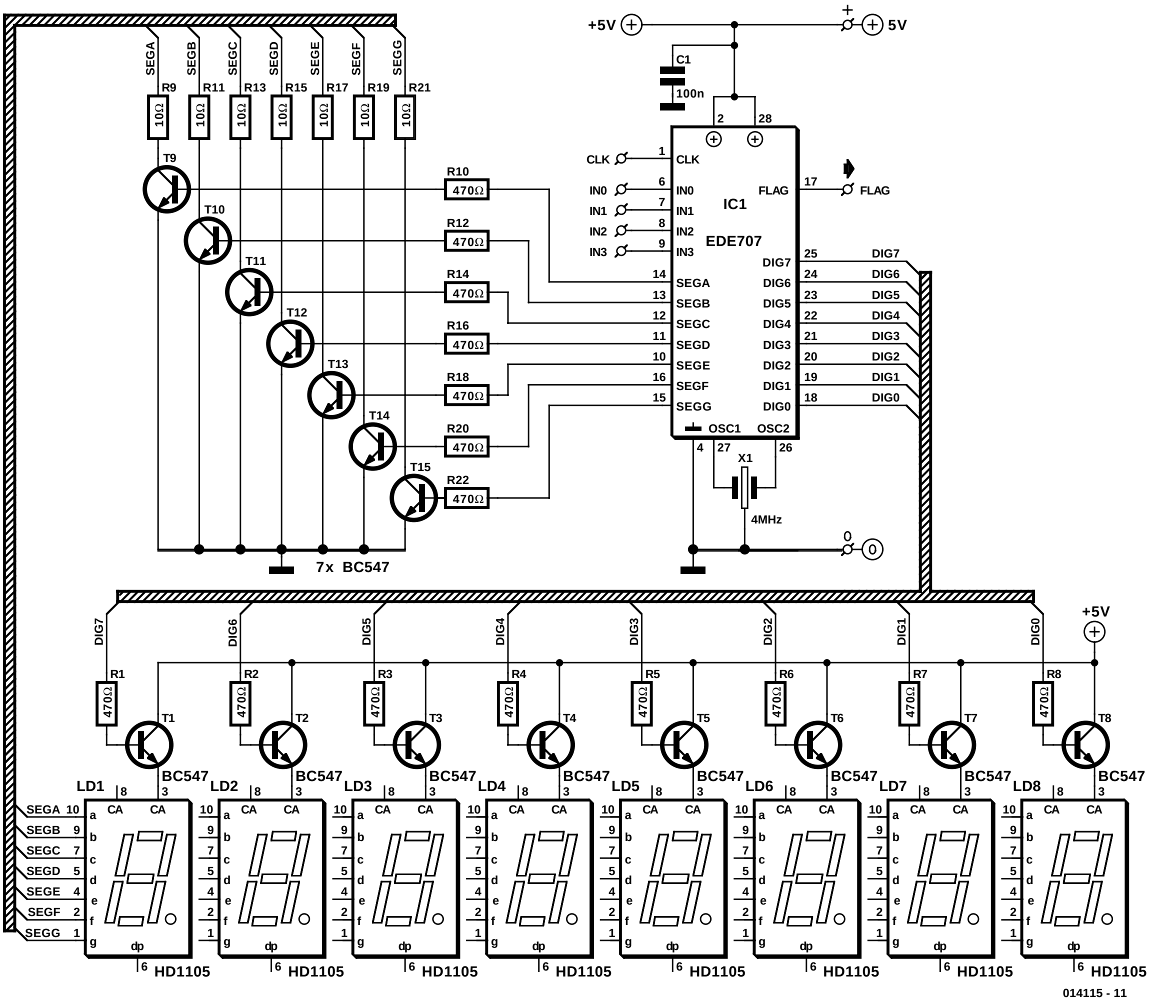

The EDE707 from E-Lab Digital Engineering (www.elabinc.com) has been designed to drive a maximum of eight 7-segment displays, using only four data lines and a clock signal. The IC takes care of the display multiplexing, leading zero suppression, can function as a counter and can display the complete hexadecimal character set (0 to 9, A to F). It is suitable for use with either common anode or common cathode displays.

The state of the four inputs In3-In0 (pins 9 to 6) is read on the falling edge of the CLK/latch input (pin 1). When In3 is high, the inputs select a certain function (see **Table**); when In3 is low, the other three inputs select one of the digits. In this case the address of the digit is always sent first, followed by the value that has to be displayed. If, for example, the last digit has to show a '2', we send '0000' (address) followed by '0010' (data).

The IC can also function as a decimal counter. When the four inputs are set to '1000', the counter is incremented by one on every falling edge of the CLK input or decremented by one when '1001' is put on the databus. The maximum permissible clock frequency is 800 Hz.

The circuit diagram shows the design for common anode displays. When common cathode displays are used the collectors of T1 to T8 are connected to the cathode and the emitters to ground; the collectors of T9 to T15 are connected to +5 V, the 10 Ω resistors are between the emitter and the segment connection.

(014115-1)

IN3	IN2	IN1	IN0	ACTION
0	a	b	c	The following byte is the value for digit 'abc'.
1	0	0	0	Increment the counter by one.
1	0	0	1	Decrement the counter by one.
1	0	1	0	Reset the display to zero (00000000).
1	0	1	1	Lamp test (88888888).
1	1	0	0	Blank the whole display.
1	1	0	1	Enable the display (default).
1	1	1	0	Suppress leading zeros.
1	1	1	1	Show leading zeros (default).